



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,658	12/08/2005	Hyoung Gon Kim	8111-057-999	6243
20583	7590	09/19/2007		
JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017			EXAMINER RASHID, DAVID	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 09/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,658	Applicant(s) KIM ET AL.	
	Examiner David P. Rashid	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

All of the examiner's suggestions presented herein below have been assumed for examination purposes, unless otherwise noted.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) (Application # 10-2002-0066895, filed 4/25/2005 and Application # 10-2003-0006064, filed 4/25/2005), which papers have been placed of record in the file.
2. As recited in the MPEP under 1893.03(c) section BENEFIT CLAIM UNDER 35 USC 119(e), OR 120 AND 365(c):

The national stage application must contain a reference to the prior nonprovisional or international application (either in an application data sheet (37 CFR 1.76 or in the first sentence(s) of the specification), identifying it by application number (series code and serial number) or international application number and international filing data and indicating the relationship of the applications. The required reference to the earlier filed application must be submitted within the later of four months from the data on which the national stage commenced under 35 USC 371(b) or (f) or sixteen months from the filing date of the prior-filed application.

3. It is advised to add the reference to the prior international application in the first sentence of the specification.

Drawings

4. The following is a quote from 37 CFR 1.84(u)(1):

View numbers must be preceded by the abbreviation "FIG."
5. The drawings are objected to under 37 CFR 1.84(u)(1) for failing to capitalize the view numbers – suggest capitalizing (e.g. "Fig. 1" to "FIG. 1)
6. The following is a quote from 37 CFR 1.84(q):

Art Unit: 2624

Lead lines are those lines between the reference characters and the details referred to. Such lines may be straight or curved and should be as short as possible. They must originate in the immediate proximity of the reference character and extend to the feature indicated.

7. FIG. 3, FIG. 4, and FIG. 9 are objected to under 37 CFR 1.84(q) for failing to properly use lead lines when needed – it is suggested to connect all reference numerals to their respective feature with a proper lead line.

8. The following is a quote from 37 CFR 1.84(p)(1):

(p) Numbers, letters, and reference characters.

(1) Reference characters (numerals are preferred), sheet numbers, and view numbers must be plain and legible, and must not be used in association with brackets or inverted commas, or enclosed within outlines, e.g., encircled. They must be oriented in the same direction as the view so as to avoid having to rotate the sheet. Reference characters should be arranged to follow the profile of the object depicted.

9. FIG. 3, FIG. 4, and FIG. 9 are objected to under 37 CFR 1.84(p)(1) for failing to properly use reference numerals when needed – it is suggested to remove all parentheses from the reference numerals.

10. The following is a quote from 37 CFR 1.84(p)(3):

When necessary, such as indicating a surface or cross section, a reference character may be underlined and a blank space may be left in the hatching or shading where the character occurs so that it appears distinct.

11. FIG. 8, element S216 and FIG. 11, element 1000 are objected to under 37 CFR 1.84(p)(3) for failing to properly use underlining – it is suggested to remove the underlining from these elements and direct them to their respective features with arrows.

12. FIG. 1, FIG. 3, FIG. 4, FIG. 6, FIG. 9, FIG. 10, FIG. 12, FIG. 13, and FIG. 14 all are objected to under 37 CFR 1.83(a) because they fail to show subject matter as described in the specification, as many of the images disclosed are unclear of what they are exactly depicting.

The examiner cannot see many of the differences between the images (e.g. image with glasses, same image with the supposed removal of the glasses). Any structural detail that is essential for

Art Unit: 2624

a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

13. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

14. The following is a quote from 37 CFR 1.72:

(b) A brief abstract of the technical disclosure in the specification must commence on a separate sheet, preferably following the claims, under the heading “Abstract ” or “Abstract of the Disclosure.” The sheet or sheets presenting the abstract may not include other parts of the application or other material. The abstract in an application filed under 35 U.S.C. 111 may not exceed 150 words in length. The purpose of the abstract is to enable the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure.

15. It is noted that the abstract is 162 words in length.

Art Unit: 2624

16. The disclosure is objected to because of the following informalities:

(i) Page 6, line 31 appears to have a grammatical error – suggest changing to “...input facial images are ~~is~~ performed...”

Appropriate correction is required.

Allowable Subject Matter

17. **Claims 1 – 17** allowed.

18. The following is a statement of reasons for the indication of allowable subject matter:

Regarding **claim 1**, while the prior art teaches an image processing method for obtaining a glassless image from a color frontal facial image bearing glasses, the prior art does not teach said method comprising the steps of:

a) receiving an RGB color frontal facial image bearing glasses, wherein RGB are red-, green-, and blue-component contained in the received RGB color frontal facial image;

b) extracting candidates of eye regions from the received RGB color frontal facial image;

c) determining an exact eye region out of the candidates and normalizing the received RGB color frontal facial image in a predetermined size by centering on the determined eye region;

d) extracting a glasses frame region by using color information contained in the received RGB color frontal facial image and edge information of a glasses frame;

e) performing an RGB-HSI transformation on the normalized frontal facial image;

Art Unit: 2624

f) generating H' , S' , and I' glassless compensated images on the basis of the RGB-HSI transformed H -, S -, and I -component normalized frontal facial images, wherein the H -, S -, and I -component represent a hue, a saturation, and an intensity, respectively;

g) obtaining R' , G' , and B' compensated images by performing an HSI-RGB transformation on the H' , S' , and I' glassless compensated images; and

h) creating a glassless final color facial image on the basis of the R' , G' , and B' compensated images, wherein the step f) further comprises the steps of:

f1) obtaining H -, S -, and I -component reconstructed images by reconstructing the H -, S -, and I -component normalized frontal facial images;

f2) obtaining H -, S -, and I -component first differential images between the H -, S -, and I -component normalized frontal facial images and the H -, S -, I -component reconstructed images;

f3) obtaining H -, S -, and I -component second differential images by stretching H -, S -, and I -component first differential images on the basis of pixel information contained in the H -, S -, and I -component first differential images;

f4) determining thresholds to classify the H -, S -, and I -component second differential images into occlusion regions, non-occlusion regions, and uncertain regions;

f5) obtaining an I -component third differential image by including the extracted glasses frame region onto the uncertain region classified by the threshold within the I -component second differential image;

Art Unit: 2624

f6) classifying the H- and S-component second differential images and the I-component third differential image on the basis of the thresholds to determine a weight to be applied on the respective classified images; and

f7) obtaining the H', S', and I' compensated images by applying the weight on each of the H- and S-component second differential images and the I-component third differential image.

Conclusion

19. This application is in condition for allowance except for the following formal matters:

- (i) the drawings objections;
- (ii) the abstract objection; and
- (iii) adding priority to the specification.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

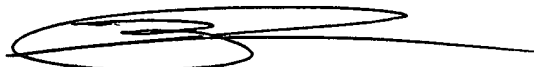
20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Rashid whose telephone number is (571) 270-1578. The examiner can normally be reached Monday - Friday 8:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624

David P Rashid
Examiner
Art Unit 2624

A handwritten signature in black ink, appearing to read 'BRIAN WERNER', with a long horizontal flourish extending to the right.

BRIAN WERNER
SUPERVISORY PATENT EXAMINER